

Appendix J: Test Results of Band 85 for eMTC operation

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Appendix J.1: RF Power Output and Effective (Isotropic) Radiated Power Output Data for M1

Test Result

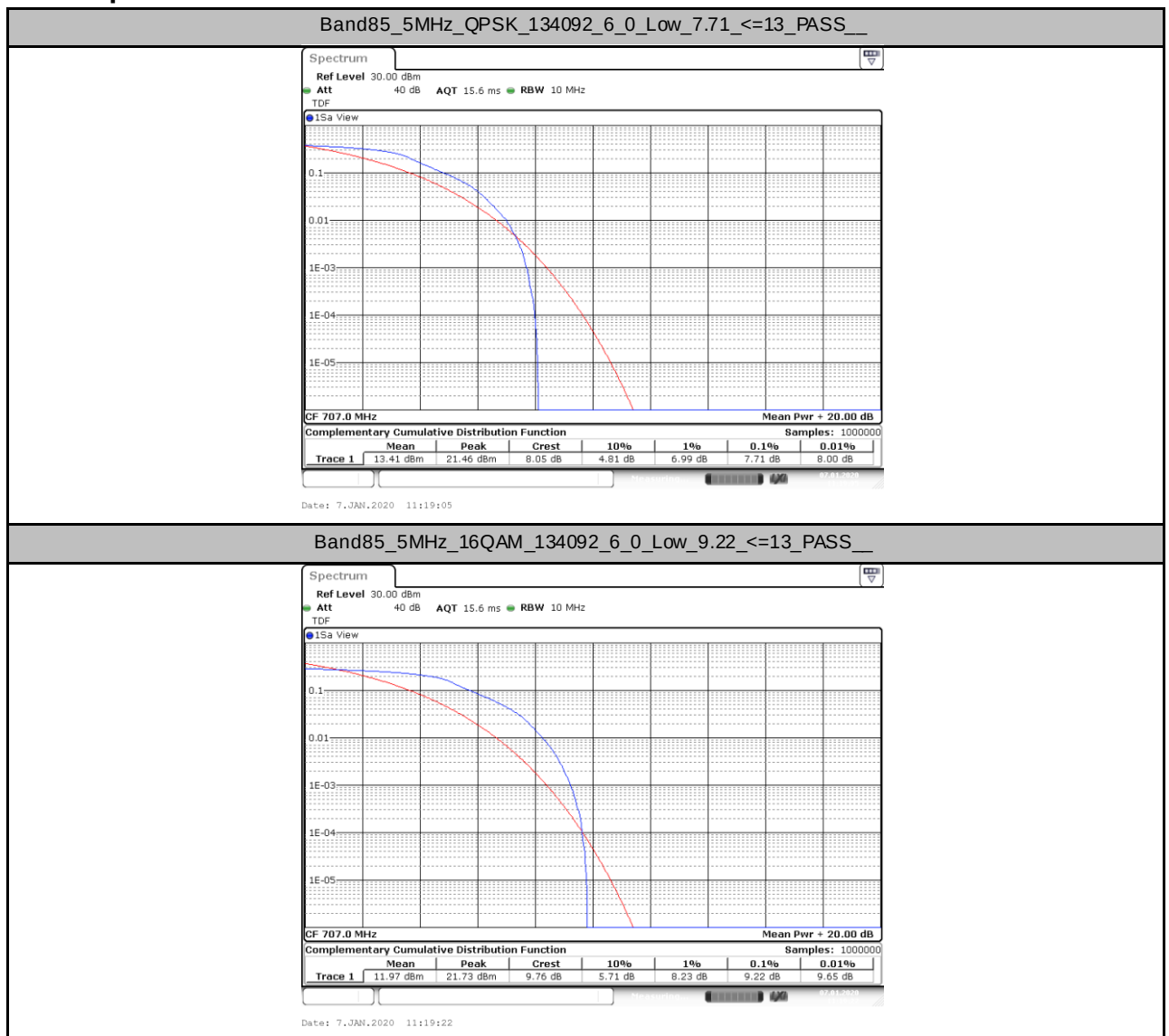
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result (dBm)	ERP		Limit (watts)	Verdict
								dBm	Watts		
Band85	5MHz	QPSK	134027	1	0	Low	22.89	22.88	0.194	3	PASS
Band85	5MHz	QPSK	134092	1	0	Low	22.71	22.7	0.186	3	PASS
Band85	5MHz	QPSK	134157	1	5	High	22.71	22.7	0.186	3	PASS
Band85	5MHz	QPSK	134157	3	3	High	21.70	21.69	0.148	3	PASS
Band85	5MHz	QPSK	134027	6	0	Low	21.83	21.82	0.152	3	PASS
Band85	5MHz	QPSK	134092	6	0	Low	21.60	21.59	0.144	3	PASS
Band85	5MHz	16QAM	134027	1	0	Low	23.21	23.2	0.209	3	PASS
Band85	5MHz	16QAM	134092	1	0	Low	22.95	22.94	0.197	3	PASS
Band85	5MHz	16QAM	134157	1	5	High	22.92	22.91	0.195	3	PASS
Band85	5MHz	16QAM	134157	3	3	High	21.85	21.84	0.153	3	PASS
Band85	5MHz	16QAM	134027	6	0	Low	21.82	21.81	0.152	3	PASS
Band85	5MHz	16QAM	134092	6	0	Low	21.60	21.59	0.144	3	PASS
Band85	10MHz	QPSK	134092	1	0	Low	22.81	22.8	0.191	3	PASS
Band85	10MHz	QPSK	134092	1	5	High	22.60	22.59	0.182	3	PASS
Band85	10MHz	QPSK	134092	5	0	Low	21.71	21.7	0.148	3	PASS
Band85	10MHz	QPSK	134092	5	1	High	21.58	21.57	0.144	3	PASS
Band85	10MHz	16QAM	134092	1	0	Low	23.01	23	0.200	3	PASS
Band85	10MHz	16QAM	134092	1	5	High	22.83	22.82	0.191	3	PASS
Band85	10MHz	16QAM	134092	5	0	Low	21.81	21.8	0.151	3	PASS
Band85	10MHz	16QAM	134092	5	1	High	21.68	21.67	0.147	3	PASS

Appendix J.2: Peak-to-Average Ratio (CCDF) for M1

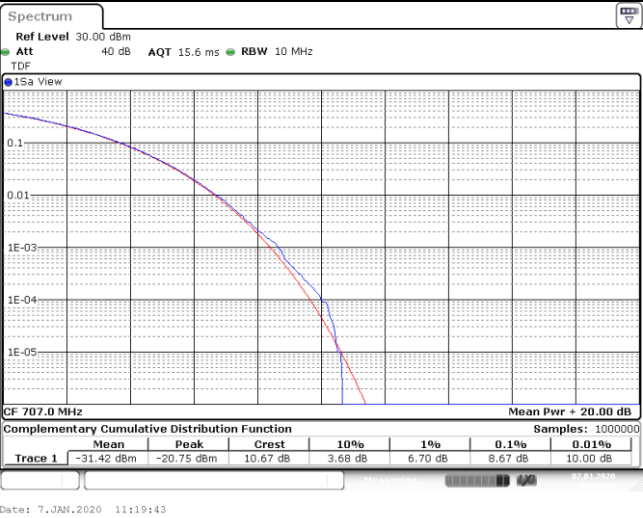
Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dB)	Limit(dB)	Verdict
Band85	5MHz	QPSK	134092	6	0	Low	7.71	<=13	PASS
Band85	5MHz	16QAM	134092	6	0	Low	9.22	<=13	PASS
Band85	10MHz	QPSK	134092	6	0	Low	8.67	<=13	PASS
Band85	10MHz	16QAM	134092	6	0	Low	8.96	<=13	PASS

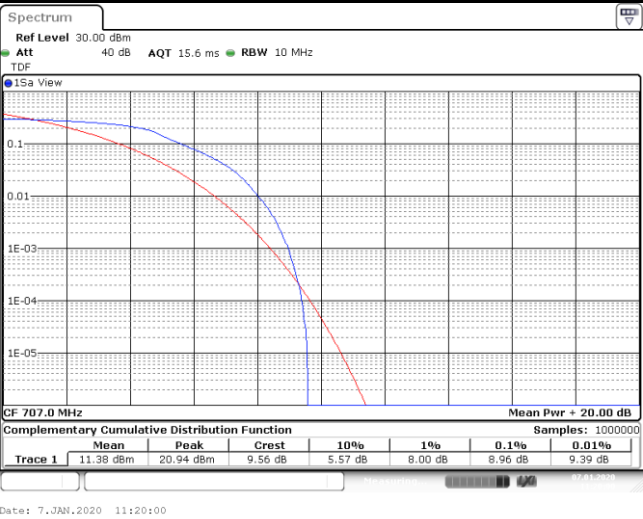
Test Graphs



Band85_10MHz_QPSK_134092_6_0_Low_8.67_<=13_PASS__



Band85_10MHz_16QAM_134092_6_0_Low_8.96_<=13_PASS__

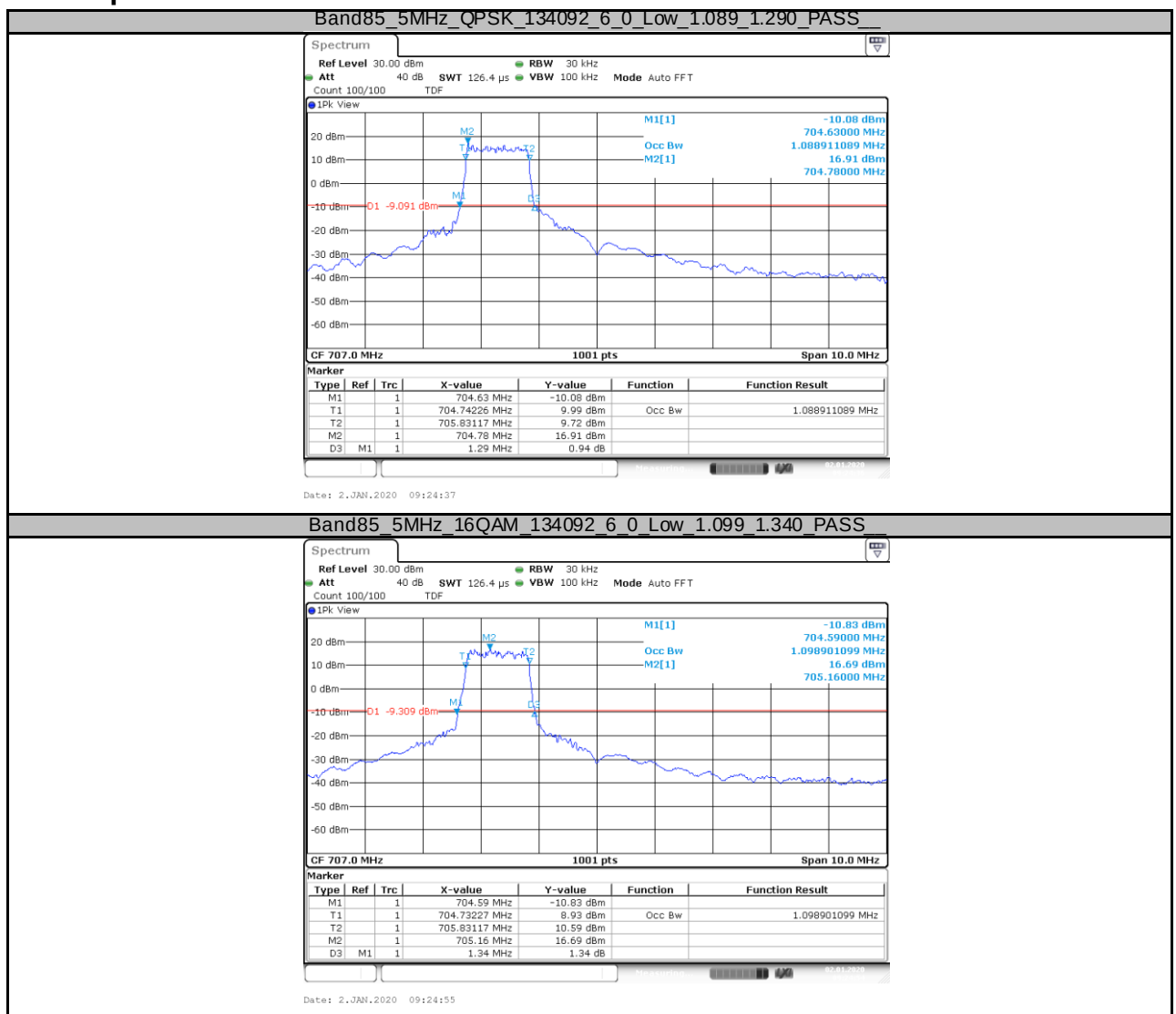


Appendix J.3: 26dB Bandwidth and Occupied Bandwidth for M1

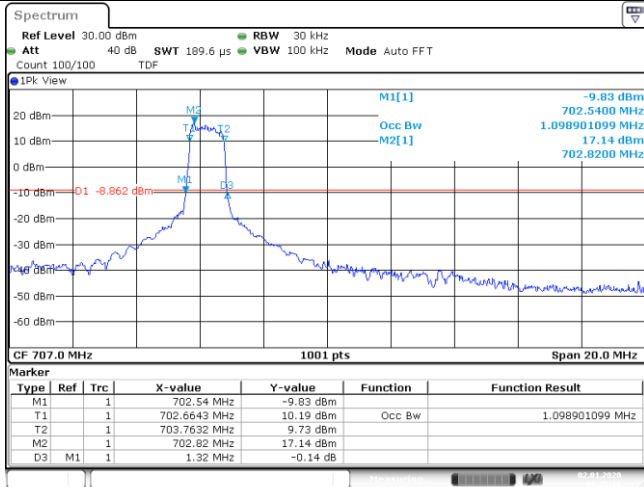
Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band85	5MHz	QPSK	134092	6	0	Low	1.089	1.290	PASS
Band85	5MHz	16QAM	134092	6	0	Low	1.099	1.340	PASS
Band85	10MHz	QPSK	134092	6	0	Low	1.099	1.320	PASS
Band85	10MHz	16QAM	134092	6	0	Low	1.099	1.320	PASS

Test Graphs

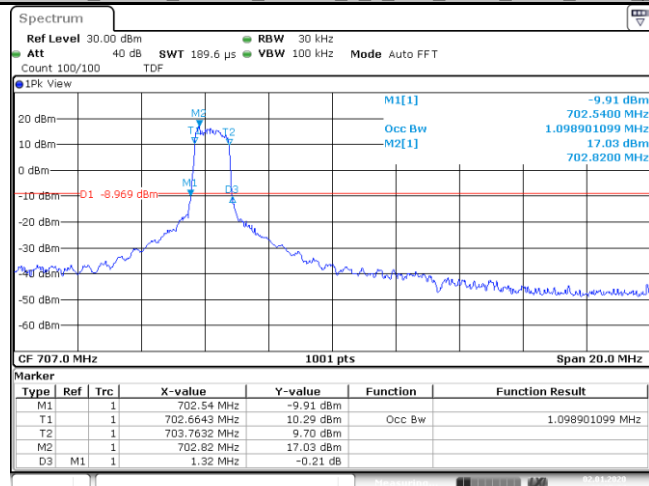


Band85_10MHz_QPSK_134092_6_0_Low_1.099_1.320_PASS



Date: 2.JAN.2020 09:25:16

Band85_10MHz_16QAM_134092_6_0_Low_1.099_1.320_PASS



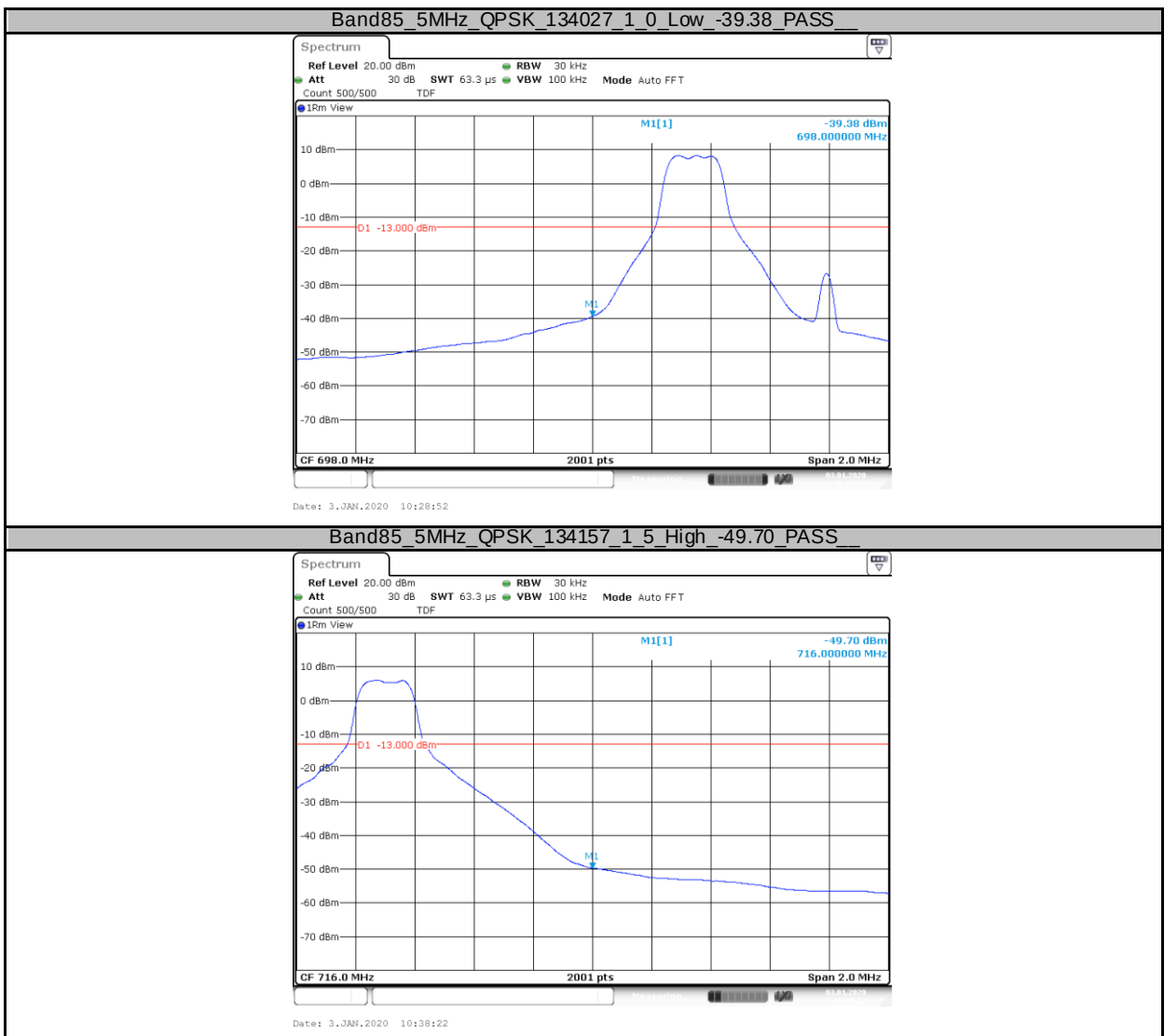
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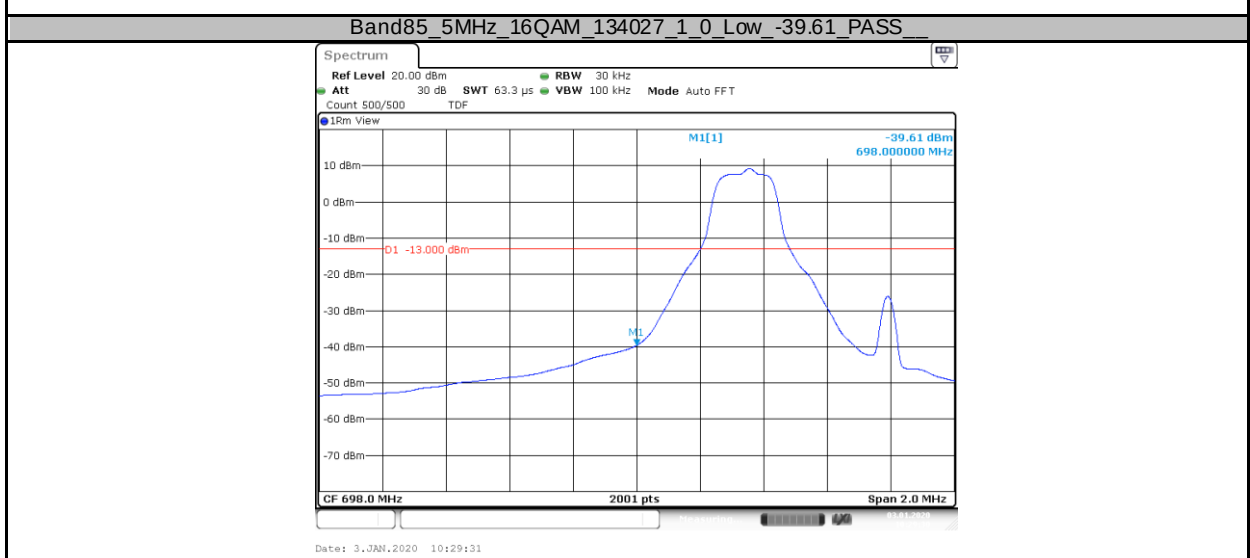
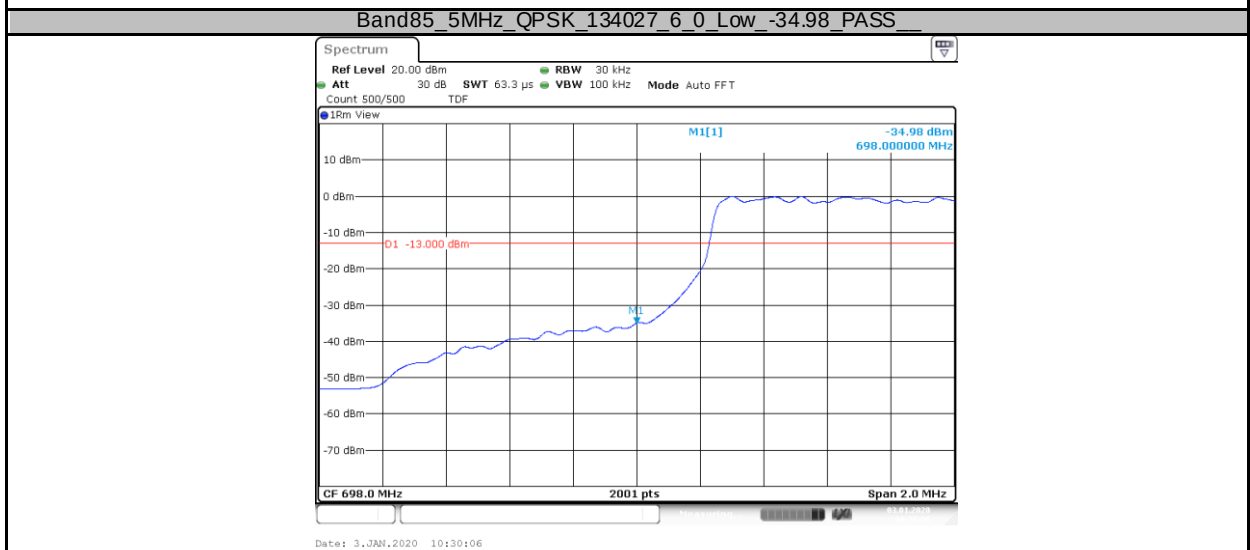
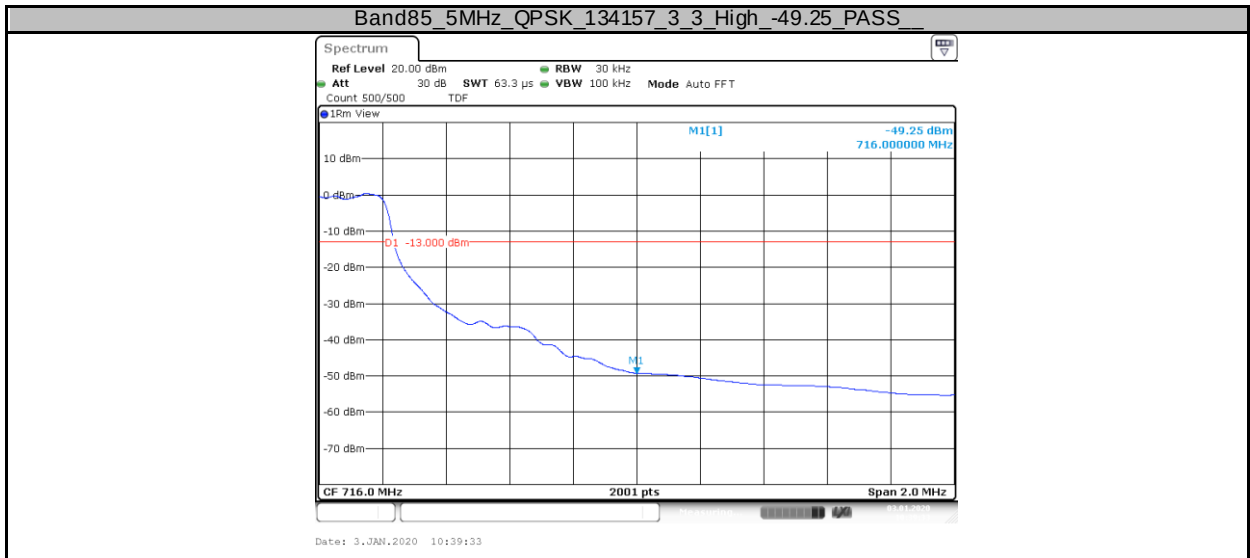
Appendix J.4: Band Edge for M1

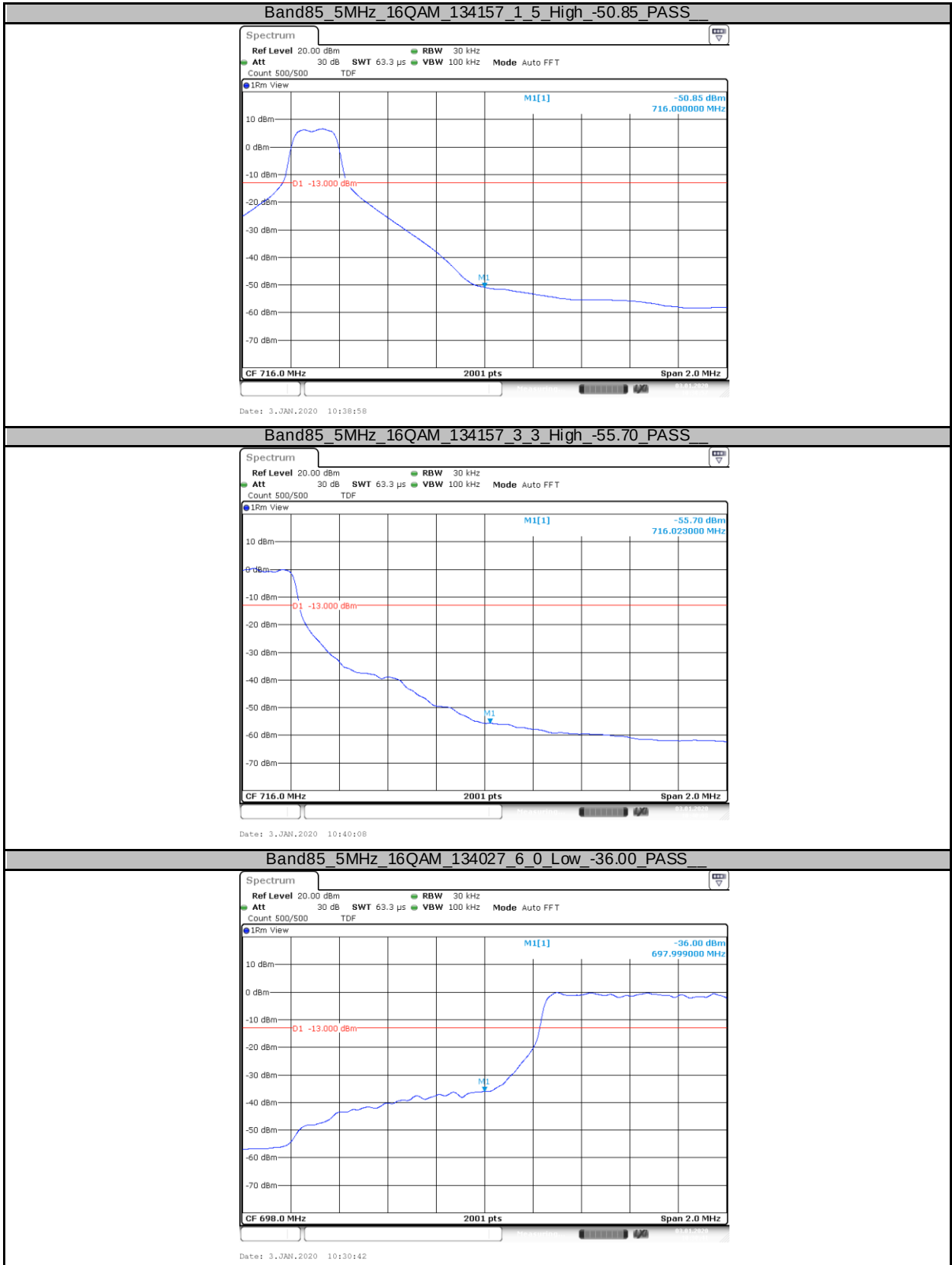
Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Result (dBm)	Verdict
Band85	5MHz	QPSK	134027	1	0	Low	-39.38	PASS
Band85	5MHz	QPSK	134157	1	5	High	-49.70	PASS
Band85	5MHz	QPSK	134157	3	3	High	-49.25	PASS
Band85	5MHz	QPSK	134027	6	0	Low	-34.98	PASS
Band85	5MHz	16QAM	134027	1	0	Low	-39.61	PASS
Band85	5MHz	16QAM	134157	1	5	High	-50.85	PASS
Band85	5MHz	16QAM	134157	3	3	High	-55.70	PASS
Band85	5MHz	16QAM	134027	6	0	Low	-36.00	PASS

Test Graphs







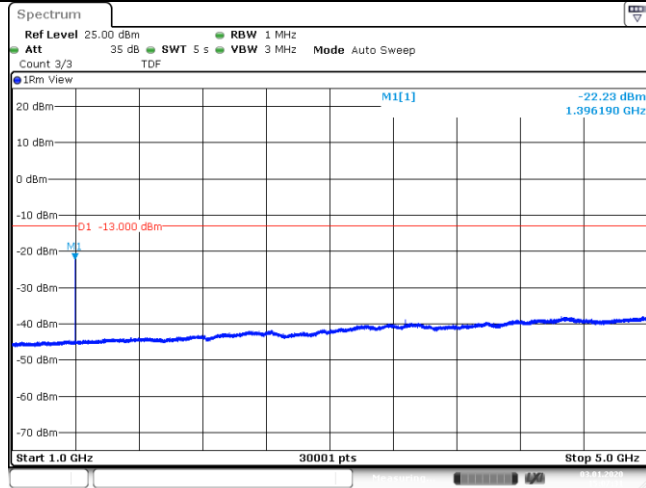
Appendix J.5: Conducted Spurious Emission for M1

Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Start Freq	Stop Freq	Result (dBm)	Verdict
Band85	5MHz	QPSK	134027	1	0	Low	1000	5000	-22.23	PASS
Band85	5MHz	QPSK	134027	1	0	Low	5000	12000	-47.72	PASS
Band85	5MHz	QPSK	134027	1	0	Low	12000	26500	-41.68	PASS
Band85	5MHz	QPSK	134027	1	0	Low	30	1000	-35.35	PASS
Band85	5MHz	QPSK	134092	1	0	Low	5000	12000	-47.68	PASS
Band85	5MHz	QPSK	134092	1	0	Low	1000	5000	-24.2	PASS
Band85	5MHz	QPSK	134092	1	0	Low	30	1000	-35.58	PASS
Band85	5MHz	QPSK	134092	1	0	Low	12000	26500	-41.43	PASS
Band85	5MHz	QPSK	134157	1	5	High	5000	12000	-47.7	PASS
Band85	5MHz	QPSK	134157	1	5	High	1000	5000	-25.7	PASS
Band85	5MHz	QPSK	134157	1	5	High	12000	26500	-41.61	PASS
Band85	5MHz	QPSK	134157	1	5	High	30	1000	-35.44	PASS
Band85	5MHz	QPSK	134157	3	3	High	12000	26500	-41.58	PASS
Band85	5MHz	QPSK	134157	3	3	High	5000	12000	-47.73	PASS
Band85	5MHz	QPSK	134157	3	3	High	1000	5000	-28.64	PASS
Band85	5MHz	QPSK	134157	3	3	High	30	1000	-35.11	PASS
Band85	5MHz	QPSK	134027	6	0	Low	5000	12000	-47.63	PASS
Band85	5MHz	QPSK	134027	6	0	Low	12000	26500	-41.5	PASS
Band85	5MHz	QPSK	134027	6	0	Low	1000	5000	-23.33	PASS
Band85	5MHz	QPSK	134027	6	0	Low	30	1000	-35.97	PASS
Band85	5MHz	QPSK	134092	6	0	Low	5000	12000	-47.75	PASS
Band85	5MHz	QPSK	134092	6	0	Low	1000	5000	-32.64	PASS
Band85	5MHz	QPSK	134092	6	0	Low	30	1000	-34.93	PASS
Band85	5MHz	QPSK	134092	6	0	Low	12000	26500	-41.68	PASS
Band85	5MHz	16QAM	134027	1	0	Low	12000	26500	-41.59	PASS
Band85	5MHz	16QAM	134027	1	0	Low	30	1000	-35.42	PASS
Band85	5MHz	16QAM	134027	1	0	Low	1000	5000	-14.65	PASS
Band85	5MHz	16QAM	134027	1	0	Low	5000	12000	-47.71	PASS
Band85	5MHz	16QAM	134092	1	0	Low	30	1000	-36.19	PASS
Band85	5MHz	16QAM	134092	1	0	Low	1000	5000	-23.58	PASS
Band85	5MHz	16QAM	134092	1	0	Low	12000	26500	-41.58	PASS
Band85	5MHz	16QAM	134092	1	0	Low	5000	12000	-47.81	PASS
Band85	5MHz	16QAM	134157	1	5	High	12000	26500	-41.65	PASS
Band85	5MHz	16QAM	134157	1	5	High	5000	12000	-47.84	PASS
Band85	5MHz	16QAM	134157	1	5	High	1000	5000	-24.1	PASS
Band85	5MHz	16QAM	134157	1	5	High	30	1000	-35.94	PASS
Band85	5MHz	16QAM	134157	3	3	High	1000	5000	-27.02	PASS
Band85	5MHz	16QAM	134157	3	3	High	30	1000	-35.32	PASS
Band85	5MHz	16QAM	134157	3	3	High	5000	12000	-47.81	PASS
Band85	5MHz	16QAM	134157	3	3	High	12000	26500	-41.6	PASS
Band85	5MHz	16QAM	134027	6	0	Low	1000	5000	-21.97	PASS
Band85	5MHz	16QAM	134027	6	0	Low	5000	12000	-47.33	PASS
Band85	5MHz	16QAM	134027	6	0	Low	12000	26500	-41.75	PASS
Band85	5MHz	16QAM	134027	6	0	Low	30	1000	-35.57	PASS
Band85	5MHz	16QAM	134092	6	0	Low	1000	5000	-29.03	PASS
Band85	5MHz	16QAM	134092	6	0	Low	5000	12000	-47.71	PASS
Band85	5MHz	16QAM	134092	6	0	Low	30	1000	-35.98	PASS
Band85	5MHz	16QAM	134092	6	0	Low	12000	26500	-41.44	PASS

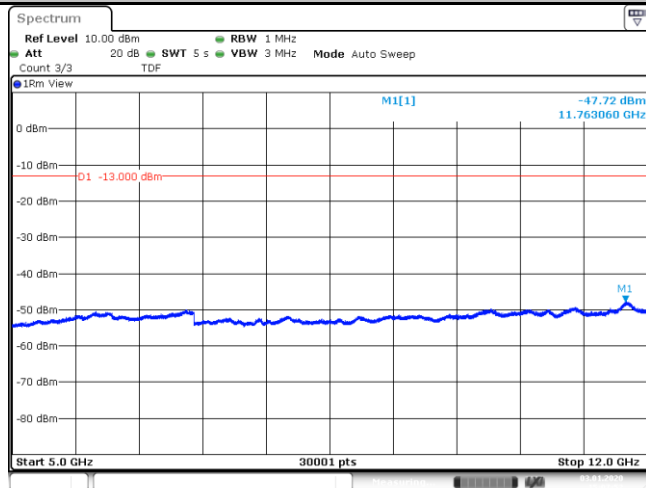
Test Graphs

Band85_5MHz_QPSK_134027_1_0_Low_1000_5000_-22.23_PASS__



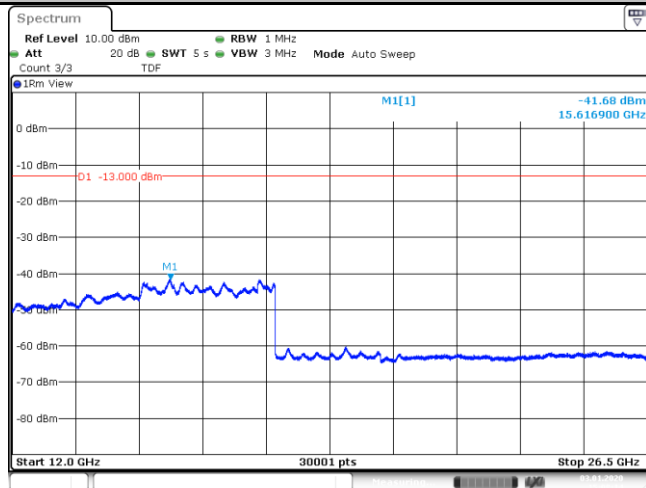
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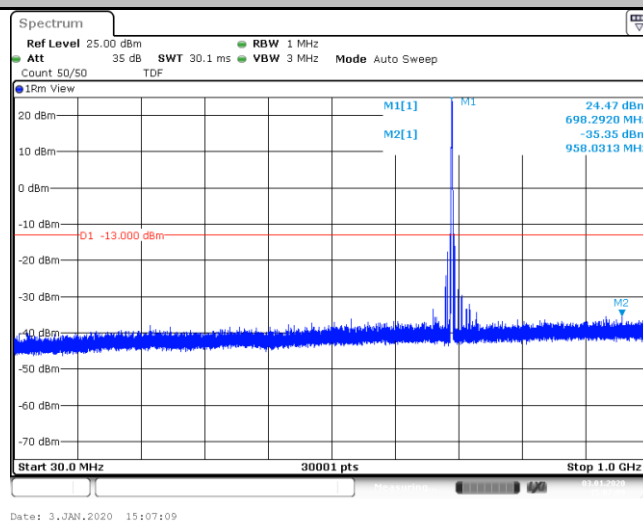
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Band85_5MHz_QPSK_134027_1_0_Low_12000_26500_-41.68_PASS__

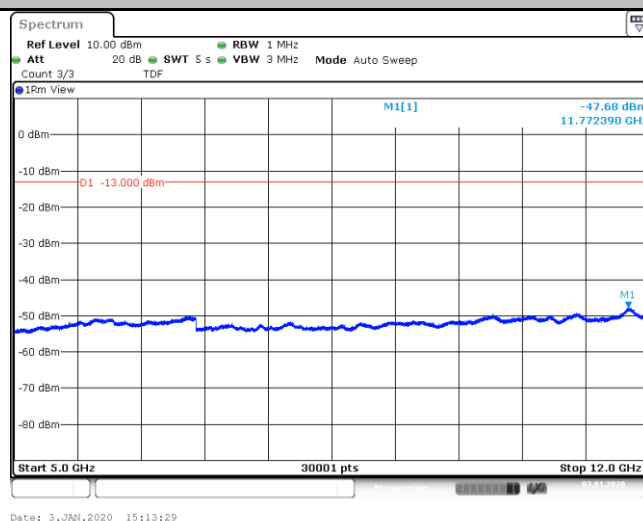


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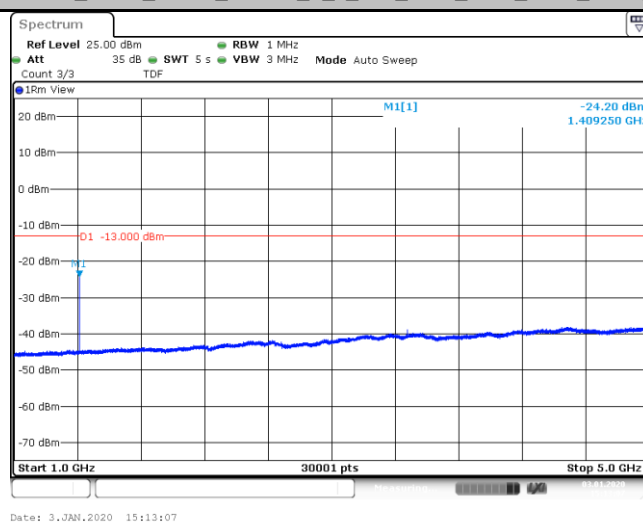
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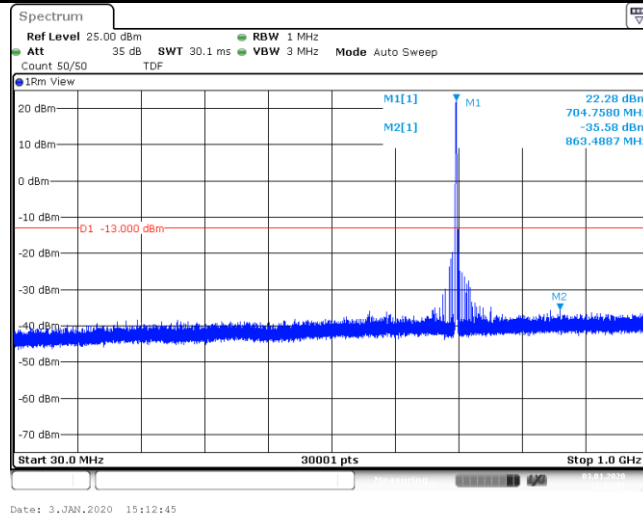
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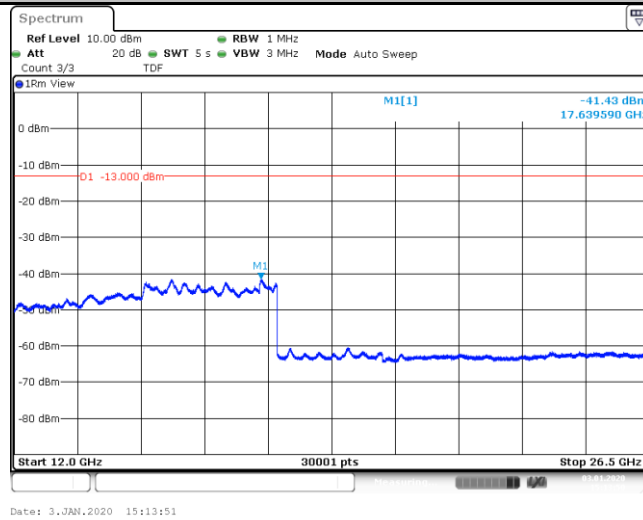
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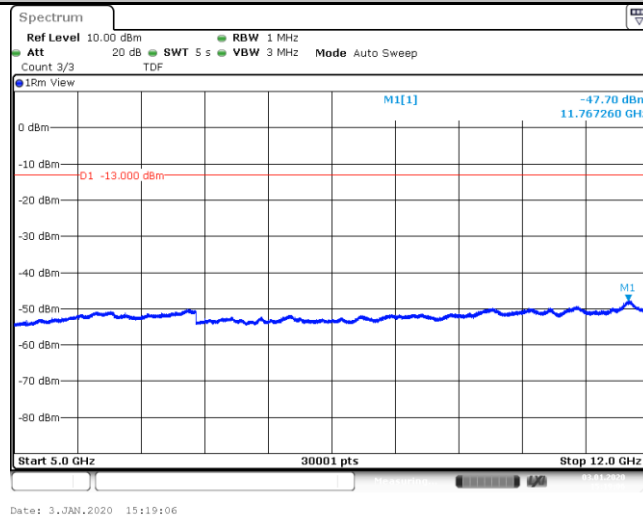
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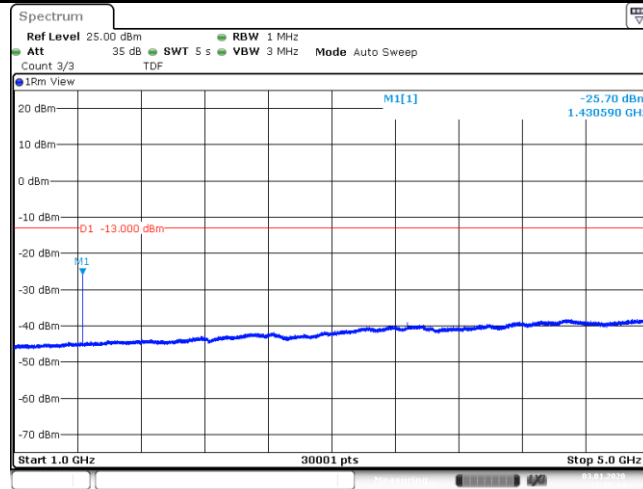
Band85_5MHz_QPSK_134092_1_0_Low_12000_26500_-41.43_PASS__



Band85_5MHz_QPSK_134157_1_5_High_5000_12000_-47.7_PASS__

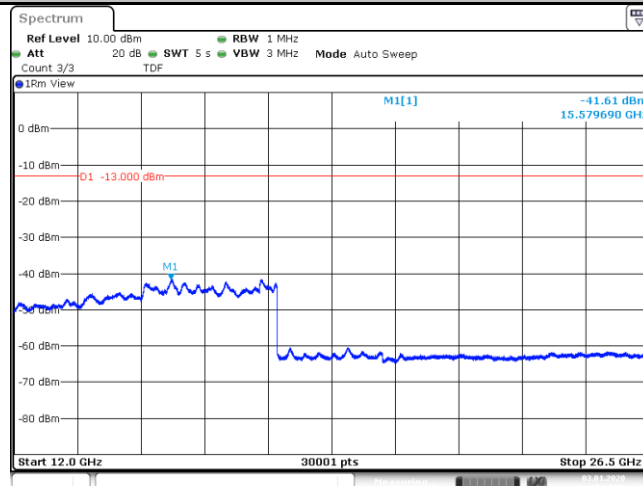


Band85_5MHz_QPSK_134157_1_5_High_1000_5000_-25.7_PASS__



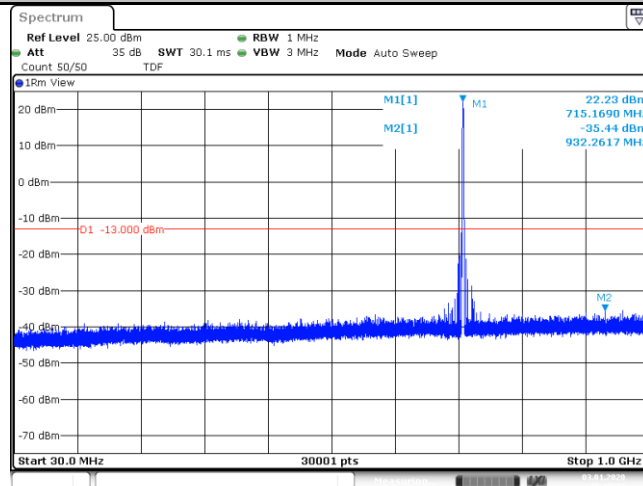
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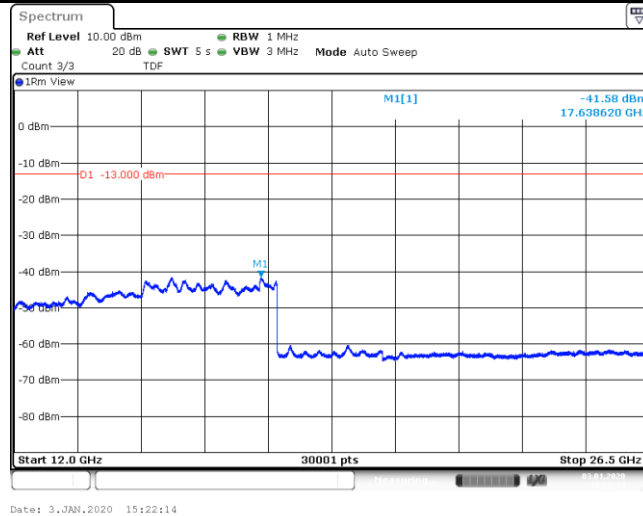
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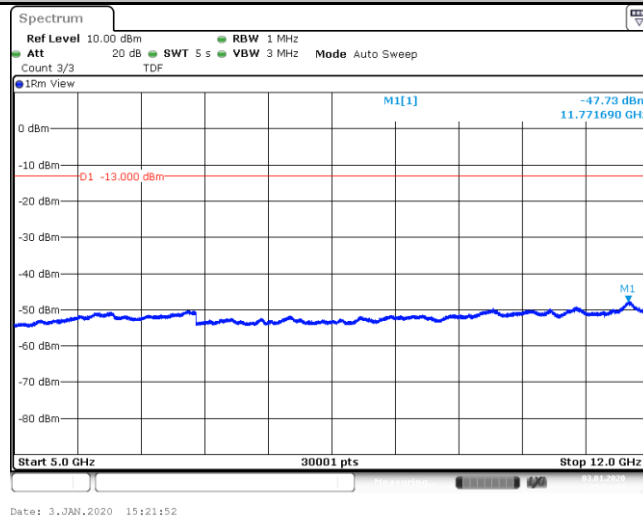


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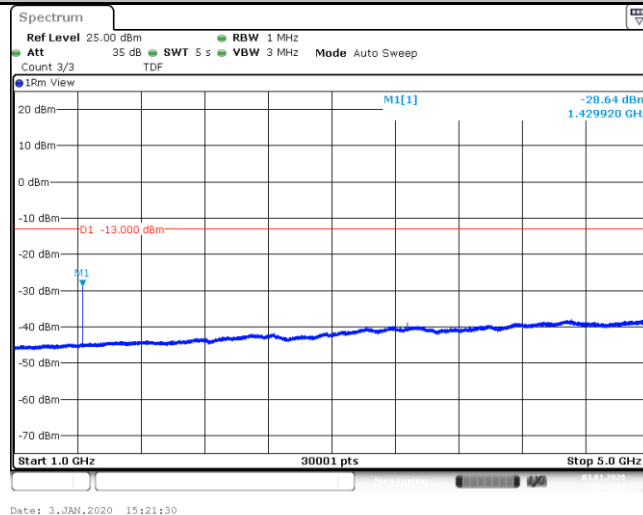
Band85_5MHz_QPSK_134157_3_3_High_12000_26500_-41.58_PASS__



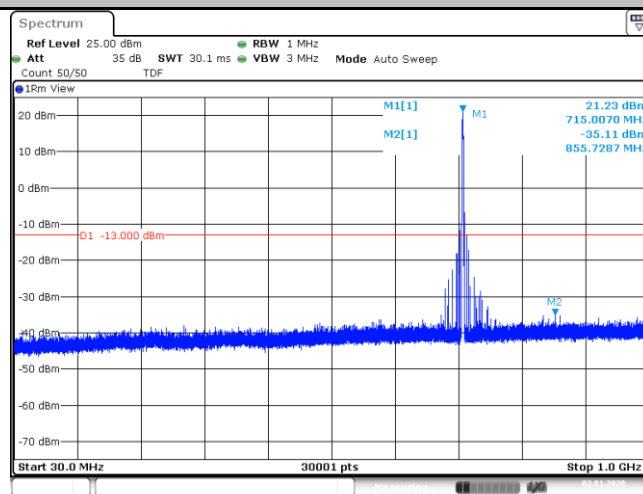
Band85_5MHz_QPSK_134157_3_3_High_5000_12000_-47.73_PASS__



Band85_5MHz_QPSK_134157_3_3_High_1000_5000_-28.64_PASS__

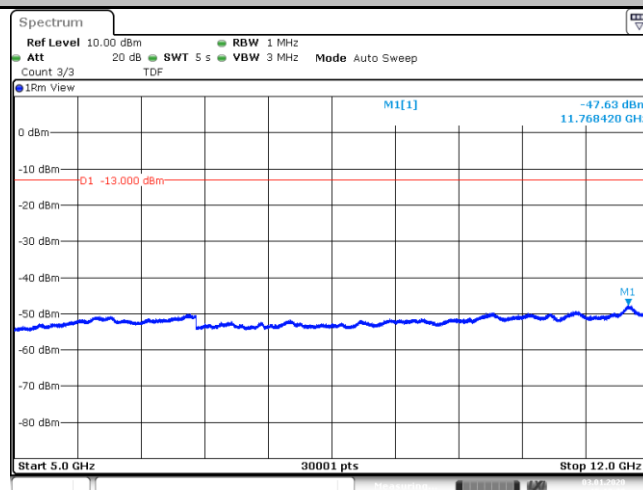


Band85_5MHz_QPSK_134157_3_3_High_30_1000_-35.11_PASS__



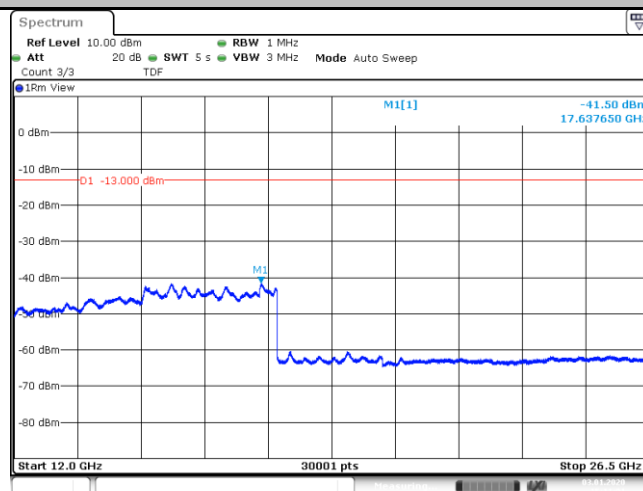
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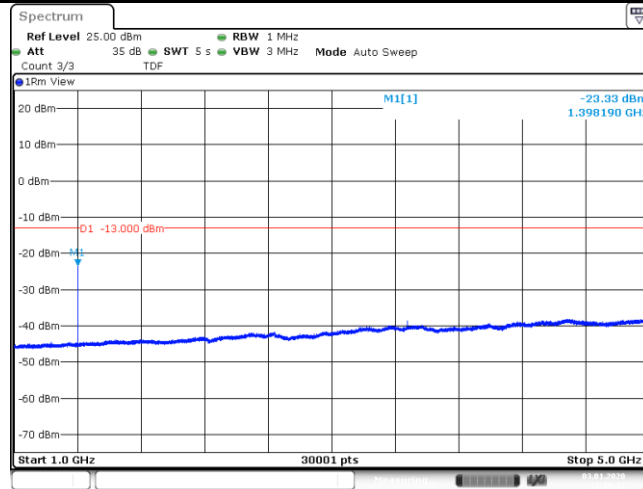
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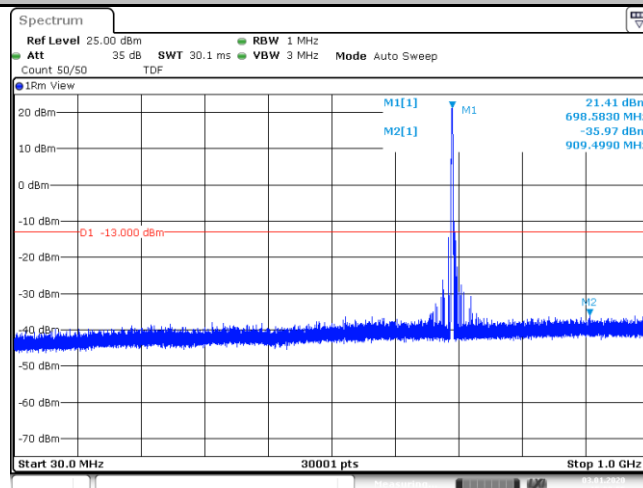
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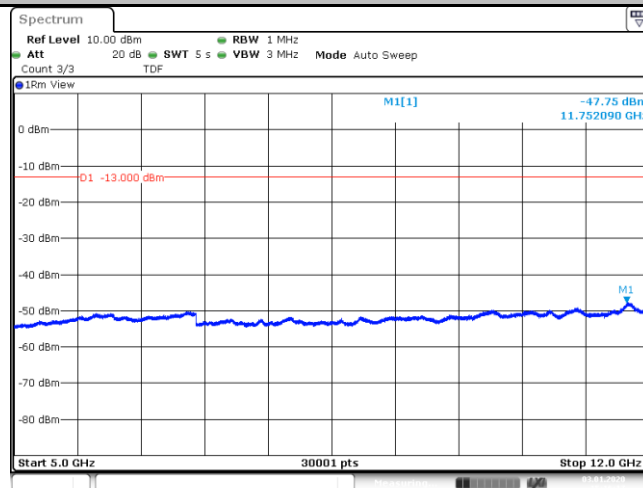
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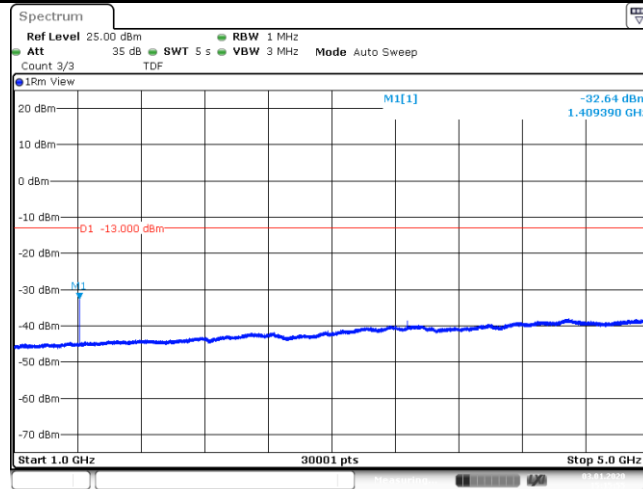
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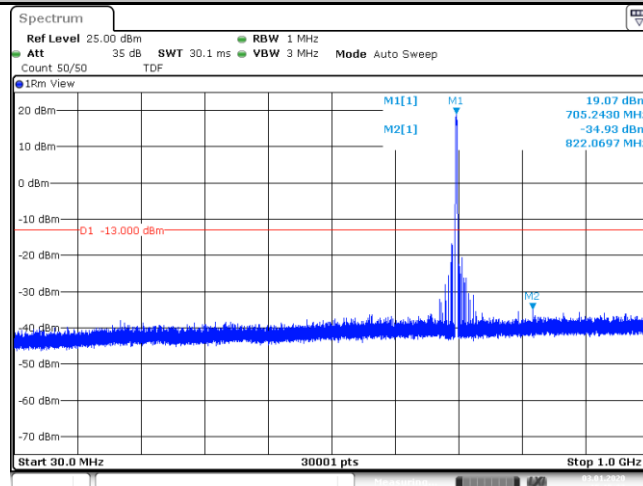
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Band85_5MHz_QPSK_134092_6_0_Low_1000_5000_-32.64_PASS__



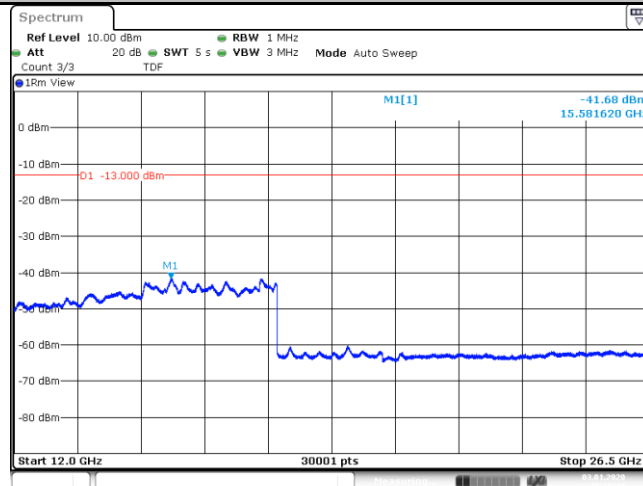
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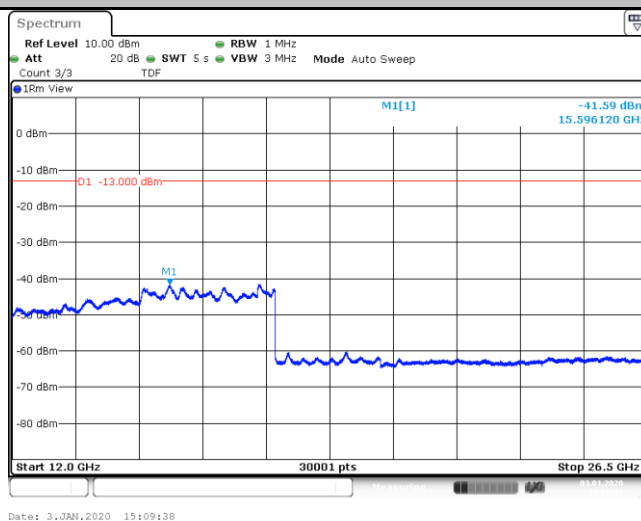
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Band85_5MHz_QPSK_134092_6_0_Low_12000_26500_-41.68_PASS__

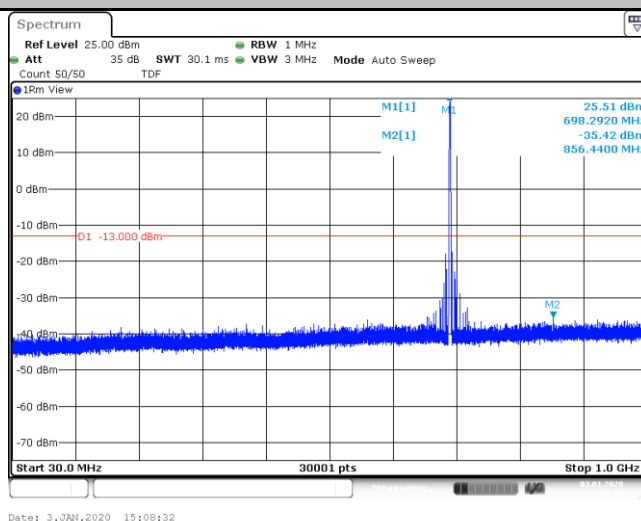


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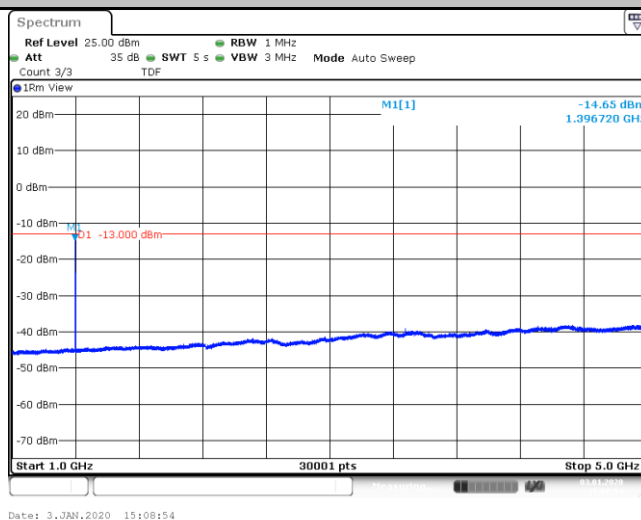
Band85_5MHz_16QAM_134027_1_0_Low_12000_26500_-41.59_PASS__



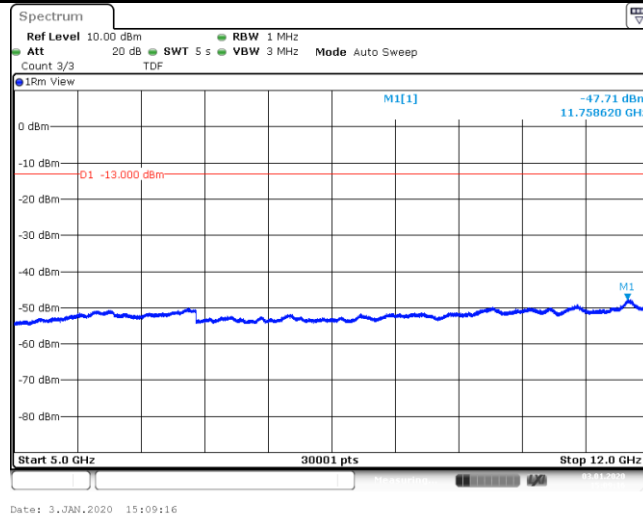
Band85_5MHz_16QAM_134027_1_0_Low_30_1000_-35.42_PASS__



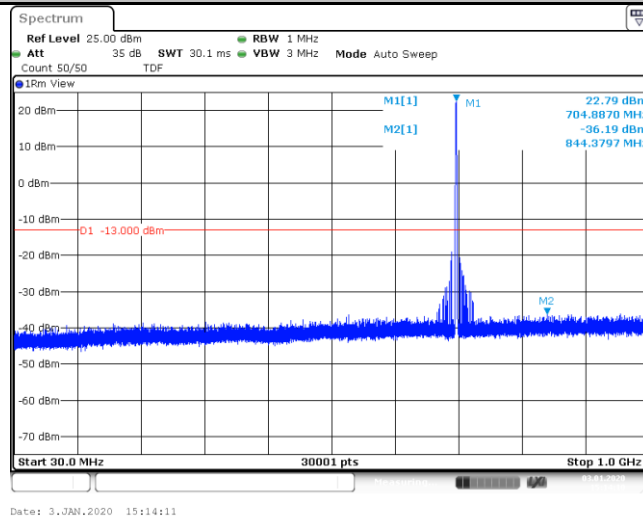
Band85_5MHz_16QAM_134027_1_0_Low_1000_5000_-14.65_PASS__



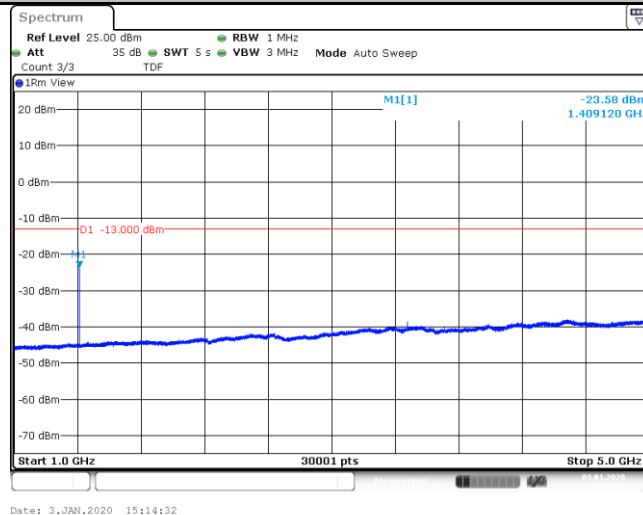
Band85_5MHz_16QAM_134027_1_0_Low_5000_12000_-47.71_PASS__



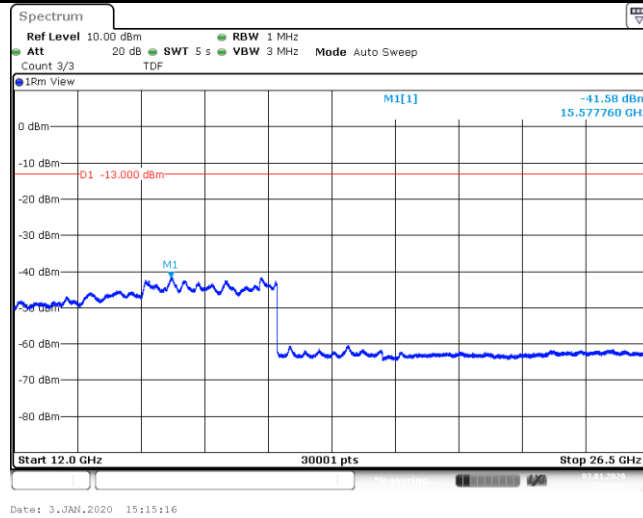
Band85_5MHz_16QAM_134092_1_0_Low_30_1000_-36.19_PASS__



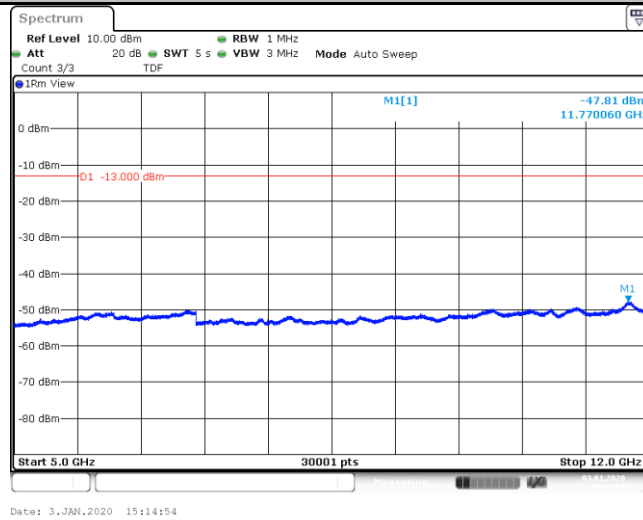
Band85_5MHz_16QAM_134092_1_0_Low_1000_5000_-23.58_PASS__



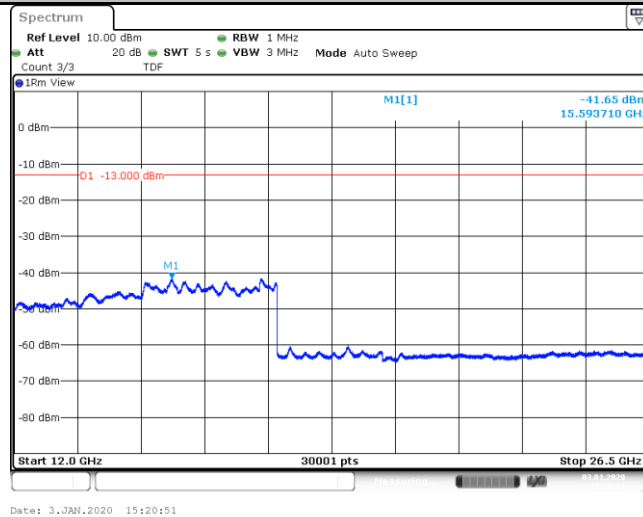
Band85_5MHz_16QAM_134092_1_0_Low_12000_26500_-41.58_PASS__



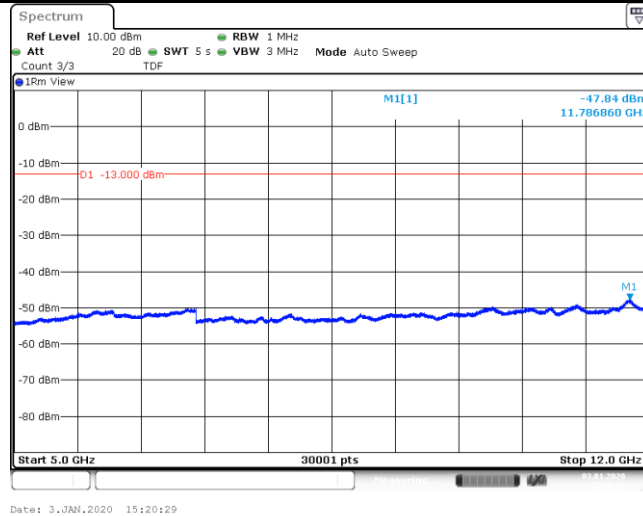
Band85_5MHz_16QAM_134092_1_0_Low_5000_12000_-47.81_PASS__



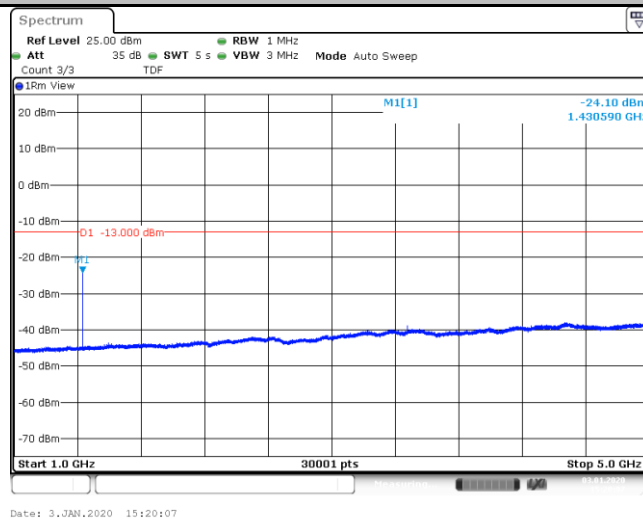
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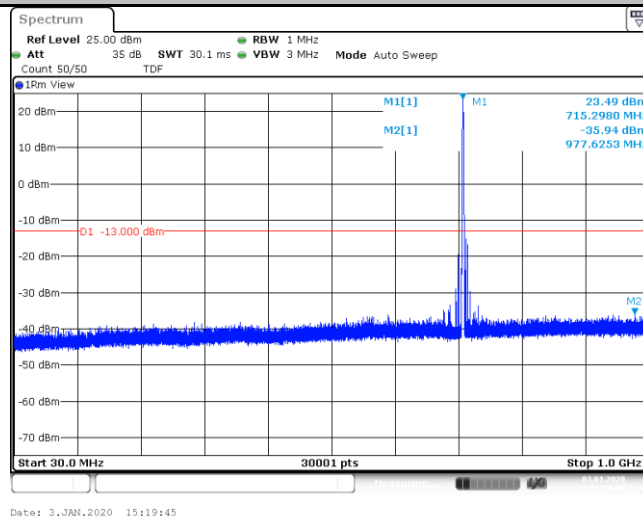
Band85_5MHz_16QAM_134157_1_5_High_5000_12000_-47.84_PASS__



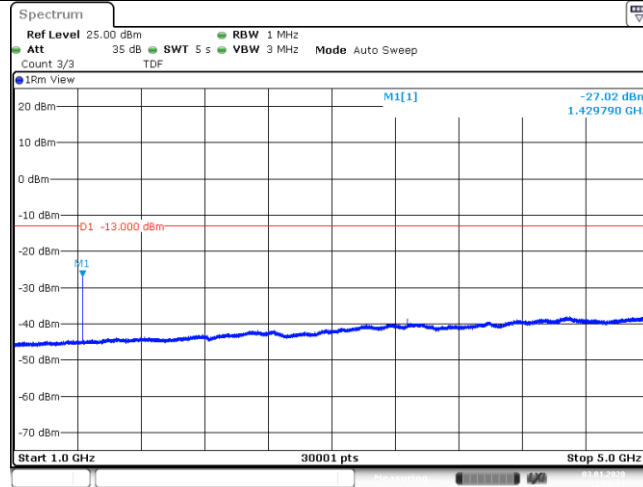
Band85_5MHz_16QAM_134157_1_5_High_1000_5000_-24.1_PASS__



Band85_5MHz_16QAM_134157_1_5_High_30_1000_-35.94_PASS__

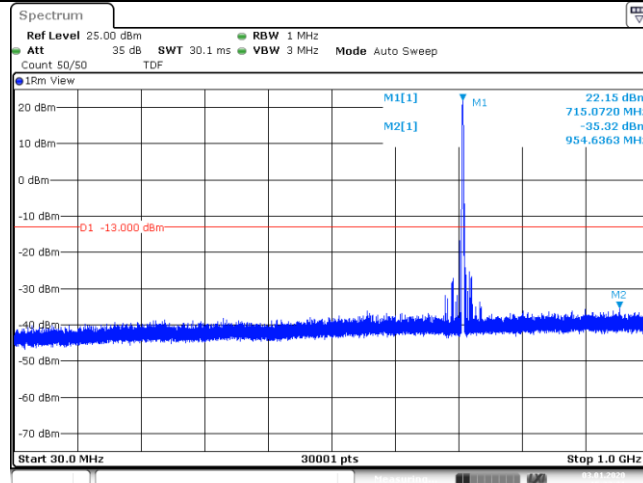


Band85_5MHz_16QAM_134157_3_3_High_1000_5000_-27.02_PASS__



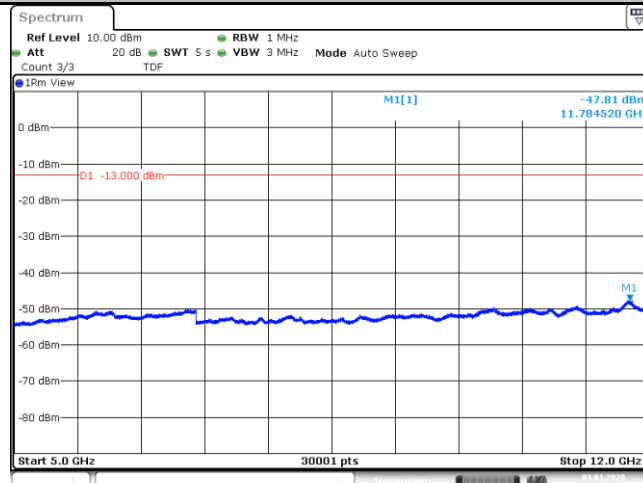
Date: 3.JAN.2020 15:22:54

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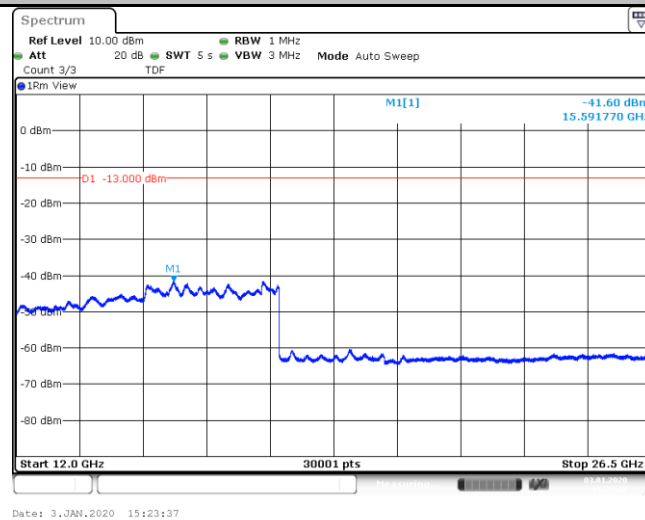
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Band85_5MHz_16QAM_134157_3_3_High_5000_12000_-47.81_PASS__

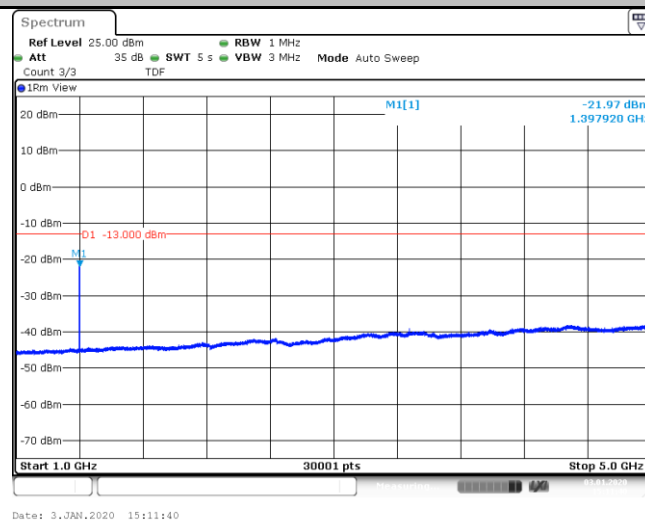


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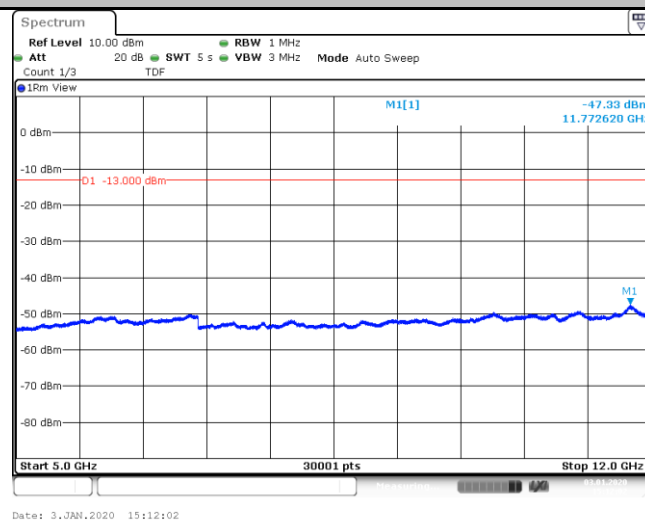
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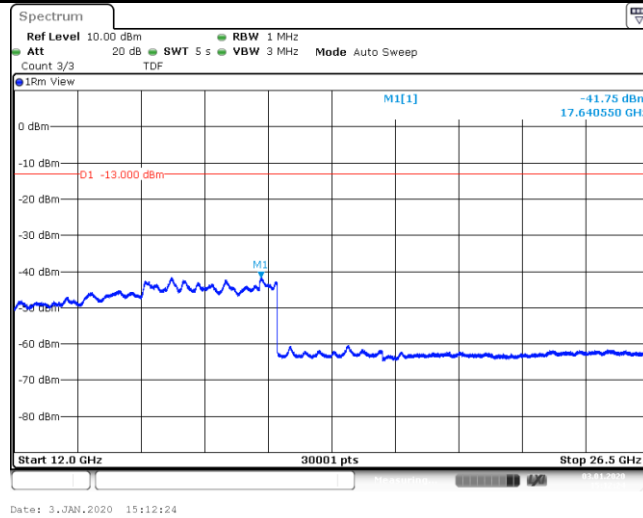
Band85_5MHz_16QAM_134027_6_0_Low_1000_5000_-21.97_PASS_



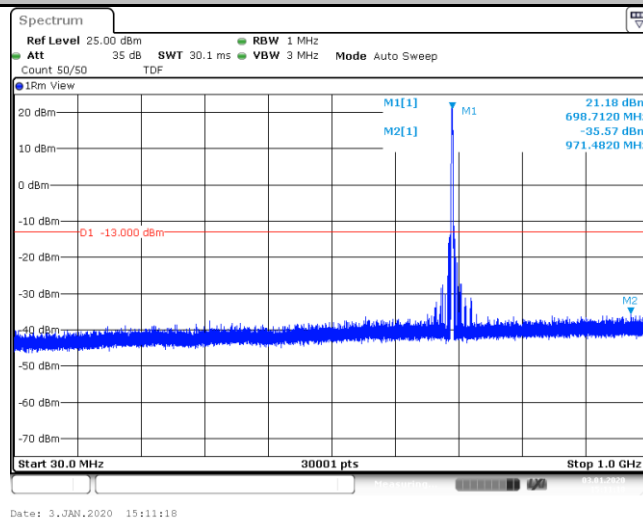
Band85 5MHz 16QAM 134027 6 0 Low 5000 12000 -47.33 PASS



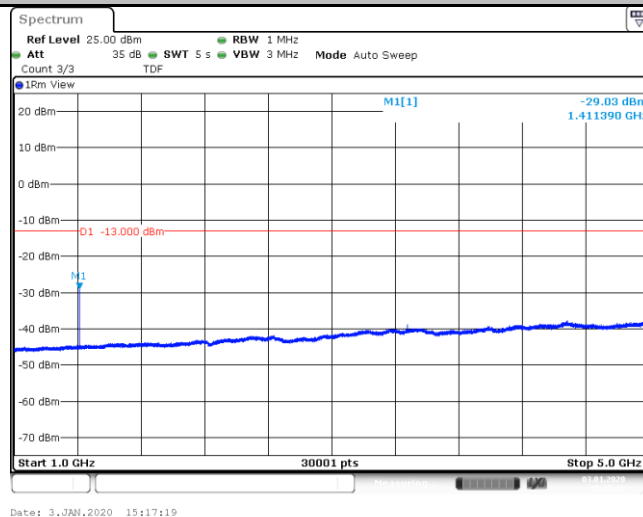
Band85_5MHz_16QAM_134027_6_0_Low_12000_26500_-41.75_PASS__



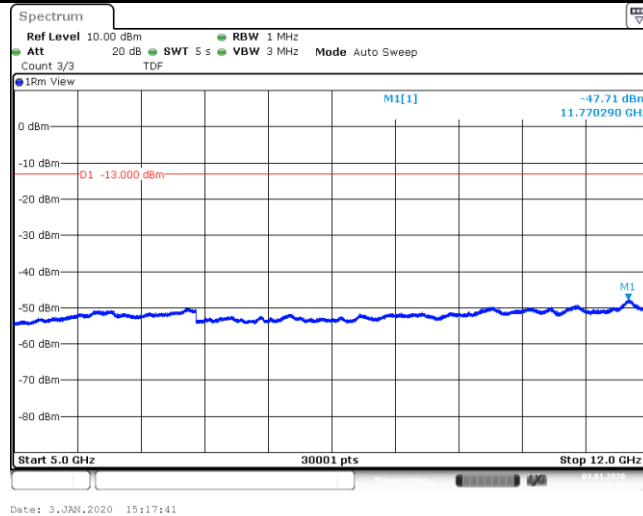
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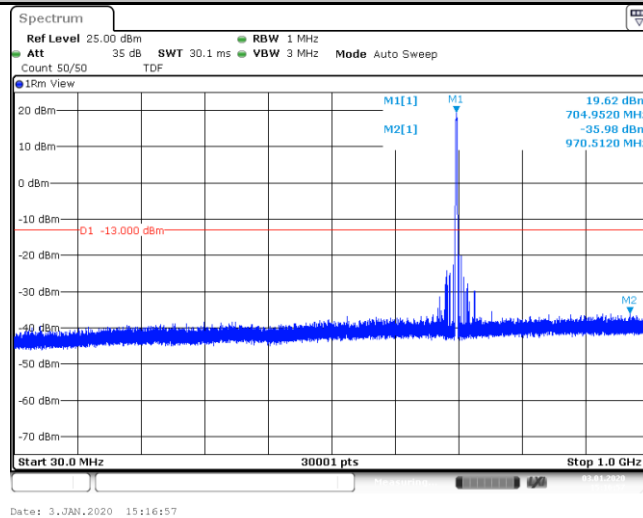
Band85_5MHz_16QAM_134092_6_0_Low_1000_5000_-29.03_PASS__



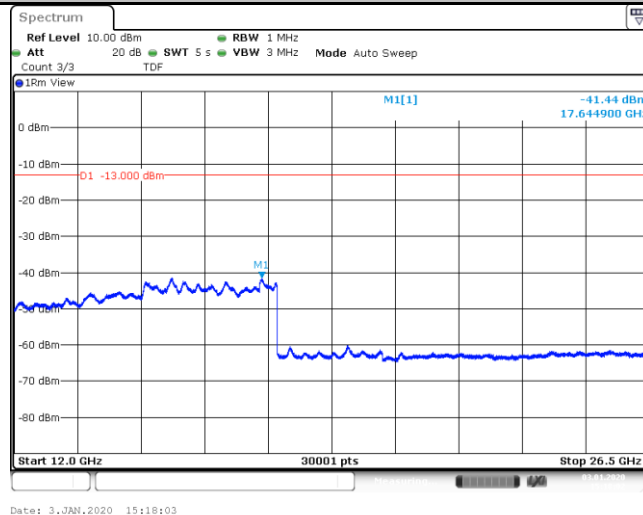
Band85_5MHz_16QAM_134092_6_0_Low_5000_12000_-47.71_PASS__



Band85_5MHz_16QAM_134092_6_0_Low_30_1000_-35.98_PASS__



Band85_5MHz_16QAM_134092_6_0_Low_12000_26500_-41.44_PASS__



Appendix J.6: Frequency Stability for M1

Test Result

Voltage												
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band85	5MHz	QPSK	134092	1	0	Low	HV	NT	5.56	0.007864	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	LV	NT	5.87	0.008303	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	NT	5.51	0.007793	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	HV	NT	8.67	0.012263	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	LV	NT	9.56	0.013522	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	NT	10.99	0.015545	±2.5	PASS

Temperature												
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band85	5MHz	QPSK	134092	1	0	Low	NV	85	5.52	0.007808	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	-30	4.98	0.007044	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	-20	5.36	0.007581	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	-10	5.58	0.007893	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	0	5.87	0.008303	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	10	4.82	0.006818	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	20	6.45	0.009123	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	30	5.34	0.007553	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	40	5.24	0.007412	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	50	5.36	0.007581	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	60	5.88	0.008317	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	70	5.56	0.007864	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	-40	5.19	0.007341	±2.5	PASS
Band85	5MHz	QPSK	134092	1	0	Low	NV	80	6.31	0.008925	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	85	9.43	0.013338	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	-30	10.63	0.015035	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	-20	9.68	0.013692	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	-10	9.16	0.012956	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	0	11.86	0.016775	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	10	11.23	0.015884	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	20	8.11	0.011471	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	30	8.80	0.012447	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	40	9.14	0.012928	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	50	9.64	0.013635	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	60	10.19	0.014413	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	70	8.27	0.011697	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	80	8.50	0.012023	±2.5	PASS
Band85	5MHz	16QAM	134092	1	0	Low	NV	-40	10.63	0.015035	±2.5	PASS